IN THE CLAIMS:

1. (Original) A method for providing end-to-end source route information to source and destination end stations coupled to respective local and remote source-route bridge (SRB) subnetworks of a data link switching (DLSw) network, the local and remote SRB sub-networks including respective local and remote DLSw peer devices that communicate over an intermediate wide area network (WAN), the method comprising the steps of:

extracting the source route information from a routing information field (RIF) of a first token ring (TR) explorer frame at the local DLSw device;

loading the source route information into a first control vector at the local DLSw device;

transporting the first control vector over the WAN to the remote DLSw device;

extracting the source route information from the first control vector at the remote DLSw device;

loading the extracted source route information into a RIF of a second TR explorer frame; and

transmitting the second TR explorer frame over the remote SRB subnetwork to the destination end station such that, upon receiving the second TR explorer frame, the destination end station has complete source route information representative of an end-to-end session with the source end station.

2. (Original) The method of Claim 1 further comprising the steps of:

generating the first TR explorer frame at the source end station; and

accumulating source route information representative of a local SRB subnetwork path between the source end station and the local DLSw device within the RIF of the first

TR explorer frame issued by the source end station and received by the local DLSw device.

3. (Original) The method of Claim 2 further comprising the step of generating the first control vector at the local DLSw device.

4. (Original) The method of Claim 3 wherein the step of transporting further comprises the steps of:

appending the first control vector to a switch-to-switch protocol (SSP) header message and;

transporting the SSP header message, including the appended first control vector, over the WAN to the remote DLSw device.

5. (Original) The method of Claim 4 further comprising the step of generating the second TR explorer frame at the remote DLSw device.

6. (Original) The method of Claim 5 further comprising the step of, at the remote DLSw device, appending next-hop information to the source route information contained within the RIF of the second TR explorer frame.

7. (Original) The method of Claim 6 further comprising the steps of:

transmitting a first response final frame containing the complete source route information from the destination end station to the remote DLSw device;

extracting the complete source route information from the first response final frame at the remote DLSw device;

loading the complete source route information into a second control vector at the remote DLSw device;

transporting the second control vector over the WAN to the remote DLSw device;

retrieving the complete source route information from the second control vector at the local DLSw device;

loading the retrieved complete source route information into a second response final frame at the local DLSw device; and

transmitting the second response final frame over the local SRB subnetwork to the source end station such that, upon receiving the second response final frame, the source end station has complete source route information representative of an end-to-end session with the destination end station.

8. (Original) Apparatus for providing end-to-end source route information to source and destination end stations coupled to respective local and remote source-route bridge (SRB) subnetworks of a data link switching (DLSw) network, the local and remote SRB subnetworks including respective local and remote DLSw peer devices that communicate over an intermediate wide area Newark (WAN), the apparatus comprising:

means for extracting the source route information from a routing information field (RIF) of a first token ring (TR) explorer frame at the local DLSw device;

means for loading the source route information into a first control vector at the local DLSw device;

means for transporting the first control vector over the WAN to the remote DLSw device;

means for extracting the source route information from the first control vector at the remote DLSw device;

means for loading the extracted source route information into a RIF of a second TR explorer frame; and

means for transmitting the second TR explorer frame over the remote SRB sub-network to the destination end station such that, upon receiving the second TR explorer frame, the destination end station has complete source route information representative of an end-to-end session with the source end station.

9. (Cancelled)

10. (Previously Presented) Apparatus for providing end-to-end source route information to source and destination end stations coupled to respective local and remote source-route bridge (SRB) subnetworks of a data link switching (DLSw) network, the local and remote SRB subnetworks including respective local and remote DLSw peer devices that communicate over an intermediate wide area network (WAN) in accordance with DLSw routing information field (RIF) passthru functionality, the apparatus comprising:

a memory for storing a plurality of capability message data structures exchanged among the DLSw peer devices to determine whether the peer devices support DLSw RIF passthru functionality, wherein a first of the plurality of message data structures comprises a DLSw RIF passthru exchange vector that indicates whether the DLSw peer devices support DLSw RIF passthru functionality;

a processor coupled to the memory and configured to process the message data structures; and

a network adapter coupled to the processor and memory for transmitting and receiving the message data structures to and from the WAN.

11. (Original) The apparatus of Claim 10 wherein a second of the plurality of message data structures comprises a DLSw virtual ring vector that indicates a virtual ring used by the DLSw peer devices.

12. (Original) The apparatus of Claim 11 wherein a third of the plurality of message data structures comprises a DLSw local rings vector that specifies a list of local rings attached to the DLSw peer devices.

13. (Original) The apparatus of Claim 12 further comprising a local database table coupled to each DLSw peer device for storing information about the locally-attached rings specified by the DLSw local rings vector.

14. (Original) The apparatus of Claim 13 further comprising a switch-to-switch protocol (SSP) control vector appended to a SSP header message structure stored in the memory, the SSP control vector containing source route information representative of one of the SRB subnetwork paths between one of the end stations and one of the DLSw peer devices.

15. (Original) The apparatus of Claim 14 wherein the SSP control vector comprises a length field having contents that specify a length of the control vector and an identification field having contents that specify an SSP_RIF type of control vector.

16. (Original) The apparatus of Claim 15 wherein the SSP control vector further comprises a source route information field containing the source route information.

17. (Original) The apparatus of Claim 16 further comprising a DLX info frame structure stored in the memory, the DLX info frame configured to transport an appended frame over the WAN after the source route information is available to the end stations on the SRB subnetworks.

18. (Original) The apparatus of Claim 17 wherein the DLX info frame comprises a header containing information required for an end-to-end RIF passthru session.

19. (Original) The apparatus of Claim 18 wherein the header of the DLX info frame comprises a version number field containing a version number of the frame, a message

type field having contents that identify the DLX info frame, and a message length field having contents that reflect an entire length of the frame including the header and appended frame.

20. (Original) The apparatus of Claim 19 wherein the header of the DLX info frame further comprises a field containing a next hop ring number and a field containing a next hop bridge number.

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21. (Currently Amended) A method for operating a router, comprising:

exchanging capabilities exchange messages with a remote router to inform said remote router that said router supports RIF passthrough capability;

receiving, in response to said remote router learning that said router supports RIF passthrough capability, a first control vector from said remote router, said first control vector having source route information from a routing information field (RIF) of a first token ring (TR) explorer frame transmitted by a source end station on a first TR network, said first control vector created at [a] said remote router connected to said first TR network;

extracting said source route information from said first control vector;

loading said extracted source route information into a RIF of a second TR explorer frame; and

transmitting said second TR explorer frame on a second TR network to a destination end station to provide said destination end station with complete source route information representative of an end-to-end session with said source end station

[determining if a remote router supports RIF passthrough capability, and if said remote router supports RIF passthrough capability, loading said source route information into a message to be sent to said remote router; and

sending said message to said remote router so that said remote router can extract said source route information and load it into a RIF of a second TR explorer frame for transmission as a second TR explorer frame on a second TR network].

22. (Previously presented) The method of claim 21 further comprising: said router and said remote router are DLSw devices.

23. (Currently Amended) A router, comprising:

means for exchanging capabilities exchange messages with a remote router to inform said remote router that said router supports RIF passthrough capability;

means for receiving, in response to said remote router learning that said router supports RIF passthrough capability, a first control vector from said remote router, said first control vector having source route information from a routing information field (RIF) of a first token ring (TR) explorer frame transmitted by a source end station on a first TR network, said first control vector created at [a] said remote router connected to said first TR network;

means for extracting said source route information from said first control vector;

means for loading said extracted source route information into a RIF of a second TR explorer frame; and

means for transmitting said second TR explorer frame on a second TR network to a destination end station to provide said destination end station with complete source route information representative of an end-to-end session with said source end station

[means for determining if a remote router supports RIF passthrough capability, and if said remote router supports RIF passthrough capability, loading said source route information into a message to be sent to said remote router; and

means for sending said message to said remote router so that said remote router can extract said source route information and load it into a RIF of a second TR explorer frame for transmission as a second TR explorer frame on a second TR network].

24. (Currently Amended) A router, comprising:

a network adapter to exchange capabilities exchange messages with a remote router to inform said remote router that said router supports RIF passthrough capability and, in response to said remote router learning that said router supports RIF passthrough capability, said router to receive a first control vector, said first control vector having source route information from a routing information field (RIF) of a first token ring (TR) explorer frame transmitted by a source end station on a first TR network, said first control vector created at said [a] remote router connected to said first TR network;

a processor to extract said source route information from said first control vector and to load said extracted source route information into a RIF of a second TR explorer frame; and

a network adapter to transmit said second TR explorer frame on a second TR network to a destination end station to provide said destination end station with complete source route information representative of an end-to-end session with said source end station

[, and to determine if a remote router supports RIF passthrough capability, and if said remote router supports RIF passthrough capability, loading said source route information into a message to be sent to said remote router; and

a network adapter to transmit said message to said remote router so that said remote router can extract said source route information and load it into a RIF of a second TR explorer frame for transmission as a second TR explorer frame on a second TR network].

25. (Previously Presented) The router of claim 24 further comprising: said router and said remote router are DLSw devices.

26. (Previously Presented) A computer readable media, said computer readable media containing instructions for execution in a processor for the practice of the method of providing end-to-end source route information to source and destination end stations coupled to respective local and remote source-route bridge (SRB) subnetworks of a data link switching (DLSw) network, the local and remote SRB subnetworks including respective local and remote DLSw peer devices that communicate over an intermediate wide area Newark (WAN), comprising:

extracting the source route information from a routing information field (RIF) of a first token ring (TR) explorer frame at the local DLSw device;

loading the source route information into a first control vector at the local DLSw device;

transporting the first control vector over the WAN to the remote DLSw device;

extracting the source route information from the first control vector at the remote DLSw device;

loading the extracted source route information into a RIF of a second TR explorer frame; and

transmitting the second TR explorer frame over the remote SRB subnetwork to the destination end station such that, upon receiving the second TR explorer frame, the destination end station has complete source route information representative of an end-to-end session with the source end station.

27. (Previously Presented) Electromagnetic signals propagating on a computer network, said electromagnetic signals carrying instructions for execution on a processor for the practice of the method of providing end-to-end source route information to source and destination end stations coupled to respective local and remote source-route bridge (SRB) subnetworks of a data link switching (DLSw) network, the local and remote SRB sub-networks including respective local and remote DLSw peer devices that communicate over an intermediate wide area network (WAN), the method comprising the steps of:

extracting the source route information from a routing information field (RIF) of a first token ring (TR) explorer frame at the local DLSw device;

loading the source route information into a first control vector at the local DLSw device;

transporting the first control vector over the WAN to the remote DLSw device;

extracting the source route information from the first control vector at the remote DLSw device;

loading the extracted source route information into a RIF of a second TR explorer frame; and

transmitting the second TR explorer frame over the remote SRB subnetwork to the destination end station such that, upon receiving the second TR explorer frame, the destination end station has complete source route information representative of an end-to-end session with the source end station.

28. (Currently Amended) A computer readable media, said computer readable media containing instructions for execution in a processor for the practice of a method of operating a router, comprising:

exchanging capabilities exchange messages with a remote router to inform said remote router that said router supports RIF passthrough capability;

receiving, in response to said remote router learning that said router supports RIF passthrough capability, a first control vector from said remote router, said first control vector having source route information from a routing information field (RIF) of a first token ring (TR) explorer frame transmitted by a source end station on a first TR network, said first control vector created at [a] said remote router connected to said first TR network;

extracting said source route information from said first control vector;

loading said extracted source route information into a RIF of a second TR explorer frame; and

transmitting said second TR explorer frame on a second TR network to a destination end station to provide said destination end station with complete source route information representative of an end-to-end session with said source end station

[determining if a remote router supports RIF passthrough capability, and if said remote router supports RIF passthrough capability, loading said source route information into a message to be sent to said remote router; and

sending said message to said remote router so that said remote router can extract said source route information and load it into a RIF of a second TR explorer frame for transmission as a second TR explorer frame on a second TR network].

29. (Currently Amended) Electromagnetic signals propagating on a computer network, said electromagnetic signals carrying instructions for execution on a processor for the practice of a method of operating a router, comprising:

exchanging capabilities exchange messages with a remote router to inform said remote router that said router supports RIF passthrough capability;

receiving, in response to said remote router learning that said router supports RIF passthrough capability, a first control vector from said remote router, said first control vector having source route information from a routing information field (RIF) of a first token ring (TR) explorer frame transmitted by a source end station on a first TR network, said first control vector created at [a] said remote router connected to said first TR network;

extracting said source route information from said first control vector;

loading said extracted source route information into a RIF of a second TR explorer frame; and

transmitting said second TR explorer frame on a second TR network to a destination end station to provide said destination end station with complete source route information representative of an end-to-end session with said source end station

[determining if a remote router supports RIF passthrough capability, and if said remote router supports RIF passthrough capability, loading said source route information into a message to be sent to said remote router; and

sending said message to said remote router so that said remote router can extract said source route information and load it into a RIF of a second TR explorer frame for transmission as a second TR explorer frame on a second TR network].